

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Dynamics, outcomes, and prerequisites of the first SARS-CoV-2 superspreading event in Germany, in February 2020: a cross-sectional epidemiological study
AUTHORS	Wessendorf, Lukas; Richter, Enrico; Schulte, Bianca; Schmithausen, Ricarda Maria; Exner, Martin; Lehmann, Nils; Coenen, Martin; Fuhrmann, Christine; Kellings, Angelika; Hüsing, Anika; Jöckel, Karl-Heinz; Streeck, Hendrik

VERSION 1 – REVIEW

REVIEWER	Ulyte, Agne University of Zurich, EBPI
REVIEW RETURNED	06-Jan-2022

GENERAL COMMENTS	<p>To the editor: - Fig 4-5 and two more were not displayed properly in the pdf proof received; I would need to see them in order to review. Thank you.</p> <p>Thank you for the opportunity to review this case study. It presents the first major superspreading event of SARS-CoV-2 in Germany, with detailed information on infected persons and potential risk factors. Although it is a pity this report is rather late (still only in review after almost two years after the event; compare to detailed analyses of spreading in Ischgl, Austria, only a few months later, as well as others), it adds important information and documents one of the early large superspreader events in Europe.</p> <p>As it is primarily a case study report, without explicit hypotheses, it is only important that it is described in detail and interpretation of the event is consistent. The authors present a detailed report of the event, thus I do not have many comments. A few things perhaps could be improved (I list major and minor comments according to the position in paper, rather than importance):</p> <ul style="list-style-type: none">- Title: please add year (perhaps also month) of the event- Abstract: please add specific date. The event has been reported in the media, thus I am not sure why the authors are not providing specific date and at least approximate location. If there are important privacy concerns, that should be motivated in Methods.- Strengths and limitations: please present first both strengths, then limitations. No need to write “strength” or “limitation” – that should be obvious from the statement. Last weakness is not clear for me – it is simply a fact, not a weakness. A weakness, in my opinion, is something that would be possible to change with a better effort; if not, it is simply a circumstance.
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	<ul style="list-style-type: none"> - Page4, 122: "importance of ventilation system" is ambiguous. Is it preventive, or facilitating factor of infections? Please make the conclusions more specific. - 144-45: the way it is phrased now, it is not clear that this is the event your study is about. - Methods: please describe in detail where and what type of event this was. It helps a lot to understand the setting; describing the "dimensions" of building does not help a lot if you do not mention if it is a single space, an office block, a theatre, etc. Please provide specific date of the event, unless not allowed by ethics. Please describe who were participating: invited persons, public, etc. - 187: volunteer – do you mean participant? - 276 and other: please make sure all references appear properly formatted. - 276: 51 days after the event, given that it was (probably – hard to judge as you do not provide specific date) around the peak of the first pandemic wave, is quite a long time. Please mention this limitation. Indeed, quite a few participants had to be excluded due to later detected PCR+ infections. It is likely, that some were missed, and thus misclassified, and % of infected in event overestimated. Please discuss. - Table 1: please describe briefly in footnote what "council" and "finale" mean. - 299-302: please move conclusions to the discussion from Results. - 307: I would suggest rephrasing, to use past tense for relationships you discovered in this single event. "additional 10 years of age are associated" implies a universal claim in any setting; using "were" here would imply more accurately you are simply describing what you observed in this single event. - 310-318: in my opinion, this belongs to Methods or Introduction, unless describing the setting was one of your Objectives. It would be great to read this information earlier in the paper, in order to understand the interpretation of your results. - General comment: please revise to make sure you interpret OR consistently. Some OR with confidence interval including 1 (and indeed, not ruling at a negative effect of similar size than the positive effect, e.g., sitting next to air outlets) are highlighted as "associations", while others of similar size are dismissed as irrelevant. I understand this specific interpretation is motivated by persisting effect after adjustments. However, in lines 361-363, 1.08 is dismissed as "did not increase" while 1.41 as "indicative of a trend". Perhaps omitting such interpretative statements from results would be the most simple solution. - 376-379: please move conclusions to Conclusions. - 383: please move references and comparison to other studies to Discussion. - I would be interested to read how many persons who were not infected reported symptoms. Also, did they fill questionnaires before or after receiving PCR and serological results? That could cause recall bias; please discuss as limitation if relevant. - 435-6: "protective effect" of what? - discussion about effect of smoking: my impression was that many of the "reduced risk" effects were explained by selection bias and suppressed immunity in smokers. If that is still the case (I might not be up to date with this literature), please revise. Please explain the role of the mentioned receptor or remove the sentence; the "role" as mentioned currently is not clear. The statement about therapeutic targets seems rather unjustified based only on your study, given that there much larger, representative studies
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	<p>investigating the effect of smoking on infection risk and outcomes. Specifically, it is the outcomes after infection that would be relevant for therapeutic explorations; your study does not analyse them.</p> <p>- 448: I am not sure if your study is “perfect” to understand this. It is not clear who were the index case(s) in your study; how were children exposed to them ; how children behaviours were different from adults, etc. Thus, your finding of lower seroprevalence in children might as well be biased by factors very specific to this particular event.</p> <p>- 458: perhaps you could be more specific in the conclusions, what “preparedness measures” you have in mind?</p> <p>- Figure legends: it is not necessary to repeat exactly the same as is already shown on figure (e.g., 362 adults of 400 children). Perhaps it is also not necessary to report OR and other results in figures simply showing the location setting.</p> <p>- Fig 1: please add the persons excluded who tested PCR+ later. Are they included in 362 adults? 316 swabs? Although they should be added to calculate participation rate, they should be removed from all other N.</p> <p>- Fig 2: just as suggestions: perhaps you could label inlets and outlets on the graph directly, as stage and bar. Please label the violet corridor, not clear what it means. If I understand correctly, table colour shows the N of infected persons on it. Given non-100% participation rate, this could be slightly misleading. Are the numbers of persons on the tables reflective of the actual numbers of people in them? (It seems most tables have 10, but some 8, etc.) Were you able to ascertain these numbers also for non-responding event participants? What about people pictured in bar and on stage? Are they just illustrative or represent something? Please explain in footnote.</p> <p>- Stable 1 shows importantly that distance was not related to infections in any analysis. This is an important conclusion that should be stressed. It highlights again the spread via aerosols, and that ventilation was perhaps more important than physical proximity. (It would have been great to have these results 1.5 years ago, when spread via aerosols was debated so much...)</p> <p>- Please mention other limitations of the study: non-perfect identification via serological test (what is the expected N of false negatives/positives?), potentially later infections after the event, the fact that the number of index cases is not known (thus, secondary attack rate is not possible to estimate; in theory, if there were many index cases, this might not even be a superspreader event – although the chances are low).</p>
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REVIEWER	Hasnain, Seyed JH Institute of Molecular Medicine
REVIEW RETURNED	20-Jan-2022

GENERAL COMMENTS	<p>The manuscript by Lukas et al comments on Analysis of the Dynamics, Outcome, and Prerequisites of the first German SARS-CoV-2 Superspreading Event. The language and intent of the manuscript is clear and apparently free from errors. I only have a few minor concerns for this work.</p> <p>1. How would authors like to comment of genetic/disease status of the participants which might have contributed to risk of acquiring the infection.</p>
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	2. Authors should concisely highlight/point the risk factors in abstract and discussions that could predispose population to COVID-19 in closed settings. These may be helpful in maintaining appropriate settings to minimize risk of super-spreading events in future.
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REVIEWER	Almuedo, Alex Reviewer Affiliation
REVIEW RETURNED	31-Jan-2022

GENERAL COMMENTS	<p>The study is a classical cross-sections epidemiological study conducted promptly from the start of the superspreading event. However the investigation was concluded in June 2021. This has limited the window opportunity of publication during the first months of the pandemics. The descriptions of this super-spreading events is important in order to understand transmission and dynamics of the infection. However it has been described changes of pattern influenced by apparitions of new strains with some different dynamics. I think this observations could be included in some toughs in the conclusions</p> <p>The study propose and describes clear objectives and there are addressed in the results.-In the article summary in line 114 it is said that the date showed that low physical distance including singing and duration of attendance increased the risk of infection. I could not find data about singin in the tables or results. I would appreciate to included or if not possible to excluded singing from the sentence.</p> <p>The conclusion analyses risk of infection depending on on age, alcohol consumption and ventilation and some behaviors. In the discussion the limitations of the study are addressed. It is observed that smoke and time spent outside the venue reduces the risk of infection. There is some discussion about how smoking and protective effect. However I would appreciate some discussion or stratified information (by smoker/non smoker) spend time outside . It is possible that smokers spend more time outside. It is interesting the observation in the study suggesting an additional 10 years of age on average associated with 28% increase risk of infection. However Increased transmissibility across all age groups has been reported for SARS-CoV-2 variants of concern. The discussion of the risk of infections for children in superspreading should include some comment about new information that can controvert the results from the study. In the following link there is some bibliography that address this point ;: https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/transmission_k_12_schools.html</p> <p>I would like to know If the investigators have some information about the need of hospitalization of this cohort. It would be of great interest to have this information.</p> <p>Figure 2 is an excellent figure that helps a lot to understand the event and what happened during the party as well the findings of the investigations. However I would appreciate a subfigure with color dictionary of the meaning of pictogram and ventilators. I could read it in the description of the figure but in my opinion a visual description in a sub square of the picture would be brilliant.</p> <p>Figures 4,5, from the pdf Manuscript should be reviewed. I only was able to see a black figure in both cases (page 25,26,27 and 28). It should be mandatory to upload corrected figures.</p>
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	<p>Minor comment: There are some wrong messages of “Error!Bookmark not defined” in two lines: 275 and 289. This should be addressed on the final version.</p> <p>I really enjoy the lecture and description of the manuscript however I think it is a pity that it has been submitted too far from the original event. This probably put some concerns on the observations observed and limits its generalization that can be extract in a different context as the actual moment with different variants and vaccination of majority of population in Europe. However It is an unique and curate description of a limited event that helps to understand dynamics in the same context.</p> <p>Despite all the comments in this review of the article I appreciate this article that I found really interesting. Is for that reason that with a major revision including some comments of the reviewers it would be a stimulating article to be published.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1: - Title: please add year (perhaps also month) of the event

Answer: We added the month and year of the event in the title.

Reviewer 1: - Abstract: please add specific date. The event has been reported in the media, thus I am not sure why the authors are not providing specific date and at least approximate location. If there are important privacy concerns, that should be motivated in Methods.

Answer: We changed the abstract and added date as well as location.

Reviewer 1: - Strengths and limitations: please present first both strengths, then limitations. No need to write “strength” or “limitation” – that should be obvious from the statement. Last weakness is not clear for me – it is simply a fact, not a weakness. A weakness, in my opinion, is something that would be possible to change with a better effort; if not, it is simply a circumstance.

Answer: We agree with the reviewer and changed the section accordingly.

Reviewer 1: - Page4, 122: “importance of ventilation system” is ambiguous. Is it preventive, or facilitating factor of infections? Please make the conclusions more specific.

Answer: The paragraph was deleted, since it is not required by the journal. In the discussion we already discussed the importance of the ventilation system in more detail.

Reviewer 1: - 144-45: the way it is phrased now, it is not clear that this is the event your study is about.

Answer: The paragraph was deleted, since it is not required by the journal. However, we made sure that this information is correctly phrased throughout the manuscript.

Reviewer 1: - Methods: please describe in detail where and what type of event this was. It helps a lot to understand the setting; describing the “dimensions” of building does not help a lot if you do not mention if it is a single space, an office block, a theatre, etc. Please provide specific date of the event, unless not allowed by ethics. Please describe who were participating: invited persons, public, etc.

Answer: We agree with the reviewer and included an additional paragraph in the method section.

Reviewer 1: - 187: volunteer – do you mean participant?

Answer: We corrected the mistake and made sure there is no similar mistake throughout the manuscript.

Reviewer 1: - 276 and other: please make sure all references appear properly formatted.

Answer: We corrected the formatting throughout the manuscript.

Reviewer 1: - 276: 51 days after the event, given that it was (probably – hard to judge as you do not provide specific date) around the peak of the first pandemic wave, is quite a long time. Please mention this limitation. Indeed, quite a few participants had to be excluded due to later detected PCR+ infections. It is likely, that some were missed, and thus misclassified, and % of infected in event overestimated. Please discuss.

Answer: We agree with the reviewer and discussed it further (lines 392-402). The infection-rate might be overestimated as the study was conducted 51 days after the event as participants could have become infected not related to the event. By the official shut down of the community shortly after the event infections after the event were limited (as discussed now in a new section of the discussion).

Reviewer 1: - Table 1: please describe briefly in footnote what "council" and "finale" mean.

Answer: We added a description of "council" and "finale" to the legend of table 1.

Reviewer 1: - 299-302: please move conclusions to the discussion from Results.

Answer: We agree with the reviewer and removed the sentence from the results section.

Reviewer 1: - 307: I would suggest rephrasing, to use past tense for relationships you discovered in this single event. "additional 10 years of age are associated" implies a universal claim in any setting; using "were" here would imply more accurately you are simply describing what you observed in this single event.

Answer: We agree with the reviewer and changed the sentence to past tense.

Reviewer 1: - 310-318: in my opinion, this belongs to Methods or Introduction, unless describing the setting was one of your Objectives. It would be great to read this information earlier in the paper, in order to understand the interpretation of your results.

Answer: We agree with the reviewer. We included an additional paragraph in the method section describing the setting of the event.

Reviewer 1: - General comment: please revise to make sure you interpret OR consistently. Some OR with confidence interval including 1 (and indeed, not ruling at a negative effect of similar size than the positive effect, e.g., sitting next to air outlets) are highlighted as "associations", while others of similar size are dismissed as irrelevant. I understand this specific interpretation is motivated by persisting effect after adjustments. However, in lines 361-363, 1.08 is dismissed as "did not increase" while 1.41 as "indicative of a trend". Perhaps omitting such interpretative statements from results would be the most simple solution.

Answer: We agree with the reviewer and changed the wording throughout the results section.

Reviewer 1: - 376-379: please move conclusions to Conclusions.

Answer: We want to apologize for the confusion. The mentioned sentence is more a summary of the results than a conclusion. We think it is helpful for the reader to summarize results after the corresponding paragraph. However, we agree that the word "conclusion" is misleading and changed it to "Taken together".

Reviewer 1: - 383: please move references and comparison to other studies to Discussion.

Answer: We agree with the reviewer and changed the sentence.

Reviewer 1: - I would be interested to read how many persons who were not infected reported symptoms. Also, did they fill questionnaires before or after receiving PCR and serological results? That could cause recall bias; please discuss as limitation if relevant.

Answer: For the more dominant symptoms, 11 out of 76 participants who reported a loss of taste as well as 11 out of 68 who reported loss of smell were not infected. For the less dominant symptoms like nausea or nose congestion 11 out of 22 participants and 94 out of 198 respectively, were not infected. Regarding the second part of your question, the participants filled questionnaires before receiving PCR and serological results. Therefore, we do not see any relevant bias.

Reviewer 1: - 435-6: “protective effect” of what?

Answer: We changed the phrasing of the sentence and explained in more detail our conclusion (please see our next answer below).

Reviewer 1: - discussion about effect of smoking: my impression was that many of the “reduced risk” effects were explained by selection bias and suppressed immunity in smokers. If that is still the case (I might not be up to date with this literature), please revise. Please explain the role of the mentioned receptor or remove the sentence; the “role” as mentioned currently is not clear. The statement about therapeutic targets seems rather unjustified based only on your study, given that there much larger, representative studies investigating the effect of smoking on infection risk and outcomes. Specifically, it is the outcomes after infection that would be relevant for therapeutic explorations; your study does not analyzlike them.

Answer: We have added a more extensive explanation of our point in the discussion. The reviewer correctly mentions that we do not show any data here on clinical outcomes, but adds that in their opinion our data is not relevant in terms of potential therapeutic interventions. But we would like to point out that our argument is as follows and was likely misunderstood: First of all, we in no way tried to imply that further research into the effect of nicotine should be solely based on our results, rather that our data confirms several other studies and meta-analyses of the effect of smoking on risk of SARS-CoV-2 infection. Secondly, the reviewer states a well-known doubt that the reduced risk of smokers for SARS-CoV-2 infection could be an artifact caused by selection bias, this usually pertains to smokers not being reliably identified as such upon admission to the hospital or that hospitalized COVID-19 patients with lung comorbidities might often have quit smoking. While good arguments for a selection bias, both circumstances do not affect our study since we are only comparing infection reates and our point relates to nicotine possibly reducing the likelihood of the infection event. We hope the inserted text clarifies this misunderstanding (lines 413-426).

Reviewer 1: - 448: I am not sure if your study is “perfect” to understand this. It is not clear who were the index case(s) in your study; how were children exposed to them; how children behaviours were different from adults, etc. Thus, your finding of lower seroprevalence in children might as well be biased by factors very specific to this particular event.

Answer: We partially disagree with the reviewer. Although the behaviors of the children can be different from adults, they were present in the same room, had similar exposure, and probably spent even less time outside the event hall (no smoking break e.g.). Nonetheless, we agree with the reviewer to change the wording “perfect” and included an additional sentence about potential bias (lines 450-451).

Reviewer 1: Perhaps you could be more specific in the conclusions, what “preparedness measures” you have in mind?

Answer: We expanded the sentence to be more specific and included examples of measures that are supported by our findings.

Reviewer 1: Figure legends: it is not necessary to repeat exactly the same as is already shown on figure (e.g., 362 adults of 400 children). Perhaps it is also not necessary to report OR and other results in figures simply showing the location setting.

Answer: We agree with the reviewer and changed the figure legends accordingly.

Reviewer 1: - Fig 1: please add the persons excluded who tested PCR+ later. Are they included in 362 adults? 316 swabs? Although they should be added to calculate participation rate, they should be removed from all other N.

Answer: Thanks to the reviewer's comment we noticed a mistake in our manuscript. We have now deleted the sentences "As we tested...during the superspreading event.", because we had decided early on to use only IgG as the study endpoint from which to infer past infection, but had overlooked an older version of this passage. All numbers and results in the manuscript are based on the analysis of 404 subjects with IgG measurements, whereof 186 had intermediate or high results. We have now clarified the methods and corrected the results section. We apologize for the oversight.

Reviewer 1:- Fig 2: just as suggestions: perhaps you could label inlets and outlets on the graph directly, as stage and bar. Please label the violet corridor, not clear what it means. If I understand correctly, table colour shows the N of infected persons on it. Given non-100% participation rate, this could be slightly misleading. Are the numbers of persons on the tables reflective of the actual numbers of people in them? (It seems most tables have 10, but some 8, etc.) Were you able to ascertain these numbers also for non-responding event participants? What about people pictured in bar and on stage? Are they just illustrative or represent something? Please explain in footnote.

Answer: To avoid any cause for confusion we included further information in the figure legend. The people pictured in the figure are illustrated to give a better understanding of the location and not to reflect the actual numbers of people. Missing persons at tables try to illustrate that not all tables had the same number of participants.

Reviewer 1: S-table 1 shows importantly that distance was not related to infections in any analysis. This is an important conclusion that should be stressed. It highlights again the spread via aerosols, and that ventilation was perhaps more important than physical proximity. (It would have been great to have these results 1.5 years ago, when spread via aerosols was debated so much...).

Answer: We agree with the reviewer and included an additional discussion accordingly (lines 355-357, 381-385).

Reviewer 1: Please mention other limitations of the study: non-perfect identification via serological test (what is the expected N of false negatives/positives?), potentially later infections after the event, the fact that the number of index cases is not known (thus, secondary attack rate is not possible to estimate; in theory, if there were many index cases, this might not even be a superspreader event – although the chances are low).

Answer: We added a paragraph with limitations and strengths at the end of the discussion.

Reviewer: 2

Reviewer 2: 1. How would authors like to comment of genetic/disease status of the participants which might have contributed to risk of acquiring the infection.

Answer: Probably because our cohort is small no genetic diseases were indicated in the participants' questionnaires. However, for those comorbidities that were listed (lung disease, cancer, etc.) we calculated odds ratios for the risk of SARS-CoV-2 infection and found no association for any of the disease categories (see Results, page 8).

Reviewer 2: 2. Authors should concisely highlight/point the risk factors in abstract and discussions that could predispose population to COVID-19 in closed settings. These may be helpful in maintaining appropriate settings to minimize risk of super-spreading events in future.

Answer: We now state all factors, which according to our study predispose to infection in closed settings, in the results and conclusions parts of the abstract and again in the discussion (lines 373-378, 427-432)

Reviewer: 3

Reviewer 3: The study is a classical cross-sections epidemiological study conducted promptly from the start of the superspreading event. However the investigation was concluded in June 2021. This has limited the window opportunity of publication during the first months of the pandemics. The descriptions of this super-spreading events is important in order to understand transmission and dynamics of the infection. However it has been described changes of pattern influenced by apparitions of new strains with some different dynamics. I think this observations could be included in some toughs in the conclusions

Answer: We have now included a paragraph in the discussion weighing the influence of new SARS-CoV-2 variants on our results (lines 364-371).

Reviewer 3: The study propose and describes clear objectives and there are addressed in the results.-In the article summary in line 114 it is said that the date showed that low physical distance including singing and duration of attendance increased the risk of infection. I could not find data about singing in the tables or results. I would appreciate to included or if not possible to excluded singing from the sentence.

Answer: We thank the reviewer for the comment and excluded singing.

Reviewer 3: The conclusion analyses risk of infection depending on on age, alcohol consumption and ventilation and some behaviors. In the discussion the limitations of the study are addressed. It is observed that smoke and time spent outside the venue reduces the risk of infection. There is some discussion about how smoking and protective effect. However I would appreciate some discussion or stratified information (by smoker/non smoker) spend time outside. It is possible that smokers spend more time outside.

Answer: As we noted in the description of our results on smoking the observed reduction in infection risk had been corrected for spending time outside. Thus, when comparing the non-smokers among our participants who had spent comparable time outside to smokers, the latter had a decreased risk of infection during the event.

Reviewer 3: It is interesting the observation in the study suggesting an additional 10 years of age on average associated with 28% increase risk of infection. However Increased transmissibility across all age groups has been reported for SARS-CoV-2 variants of concern. The discussion of the risk of infections for children in superspreading should include some comment about new information that can controvert the results from the study. In the following link there is some bibliography that address this point :: https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/transmission_k_12_schools.html

Answer: We appreciate the opportunity to discuss this extremely important and complex topic. Although available information on superspreading events and children is sparse, we discussed this more thoroughly (page 13).

Reviewer 3: I would like to know If the investigators have some information about the need of hospitalization of this cohort. It would be of great interest to have this information.

Answer: In total five participants of the event were hospitalized and one participant subsequently died. We included this information in the manuscript.

Reviewer 3: Figure 2 is an excellent figure that helps a lot to understand the event and what happened during the party as well the findings of the investigations. However, I would appreciate a subfigure with color dictionary of the meaning of pictogram and ventilators. I could read it in the

description of the figure but in my opinion a visual description in a sub square of the picture would be brilliant.

Answer: We welcome the reviewer's idea and included a subfigure/legend to explain better the colors and ventilators.

Reviewer 3: Minor comment: There are some wrong messages of "Error!Bookmark not defined" in two lines: 275 and 289. This should be addressed on the final version.

Answer: We corrected the mistake throughout the manuscript.

VERSION 2 – REVIEW

REVIEWER	Ulyte, Agne University of Zurich, EBPI
REVIEW RETURNED	03-Mar-2022

GENERAL COMMENTS	Thank you for carefully addressing all the comments. I think the manuscript is fit for publication now.
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REVIEWER	Almuedo, Alex ISGlobal, International Health
REVIEW RETURNED	16-Mar-2022

GENERAL COMMENTS	<p>In the previous review, I already said that this is an interesting article describing the first major outbreak in a German city during the beginning of the pandemic in that country. This new version, clarifies the name, the location and the specific date of the event adding information required from editors and reviewers. According to some comments and the format of the BMJOpenThe Title and abstract have been modified. These changes improve the understanding of the abstract.</p> <p>Strengths and limitations have been edited on good and accurate bullet points that address all the issues to respond.</p> <p>I review the final manuscript and all the comments from Editors and reviewers. In my opinion, the authors have done a great job and had adapted, rewritten and add sentences and observations according to the comments.</p> <p>I would highlight the improved work done on the possible infection rate overestimated due to the possibility of being infected previously or after the event. Although this would be difficult to adjust, the sentence addressing this limitation and the contextualization of the socio-epidemiological situation in that specific area after the event helps to understand better the paper.</p> <p>A</p> <p>Another high point addressed by reviewers has been the smoking and possible protective effect on SARS-COV2 infection. In my opinion, authors respond to this matter with new lines on adjusted analysis of smoking and spending time outside and of and literature addressing this possible effect.</p> <p>It is interesting the observation in the study suggesting an additional 10 years of age on average associated with a 28% increase risk of infection. This raised some comments about children and SARS-COV2 infection. To remark that the authors addressed this point with some discussion and clarification about children and these events.</p>
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	<p>Finally, the authors add information about the asymptomatic or clinical presentation, hospitalization and mortality information in the text and figures. This information, requested by some reviewers, improves the paper and the understanding of this super spreading event.</p> <p>Tables and Figures have been modified according to some comments and they have been improved on description and detail. Minor comment: please review on line 7: per 10 years; please review use Behavior (Am English) or Behaviour (Br English)</p> <p>Overall, I will say that this is an improved and excellent version of the previous one. I enjoy its reading and I appreciate the efforts done by the authors to address all the editors and reviewers.</p>
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